
Application of Theory to Practice

THE CHALLENGES OF CENTRAL LINE ASSOCIATED BLOOD STREAM INFECTIONS

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Accreditation

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Disclosures

None

Course Objectives

Upon the completion of this course the reader will be able to:

Audience

Health Care Professionals

1. Discuss current issues with CLABSIs.
2. Describe Benner's application to theory
3. List 7 of Benner's domains of nursing.
4. Discuss an example of applying theory to practice related to CLABSIs.

Healthcare associated infections (HAIs) account for an estimated 10 billion dollars in to the United States health-care system (Zimlichman et al., 2013). These preventable events can cause great harm to patients and associated with high costs. More specifically central line associated blood stream infections (CLABSIs) are the most costly at \$45,814 per event and represent about 18.9% of the overall problem, resulting in an estimated 1.8 billion in costs. The CDC defines a CLABSI as a positive single blood culture for organisms not common to the skin or two positive blood cultures for organisms commonly on the skin, when a patient has a central line at the time of infection or within the 48-hour period before. The infection may not be related to any other infections they have had growing or on admission (Vital signs, 2011). These adverse events are a critical problem in health care causing affecting 5% of all hospitalized patients each year in the United States (Vital signs, 2011). A substantial number of CLABSIs are primarily in hemodialysis units and Intensive Care Units (ICUs) resulting in elongated hospital stays, additional hospital stays, and a mortality rate from 12% to 25% (Vital signs, 2011).

Proper care and maintenance of central lines by nursing staff is pertinent to preventing CLABSIs. Care and maintenance includes proper flushing, handling of tubing and needleless connectors, sterile dressing changes, patient/family education,

accurate data collection, etc. The model of care and nurse-patient relationship is directly influenced by nurse theory in place, and the application of a selected theory can offer structure and organization, providing a systematic, predictable practice (McEwen & Wills, 2011). This can encompass collection of data, practice guidelines, nursing orders, progress notes, and strategic interventions resulting in a defined, effective nursing practice (McEwen & Wills, 2011). Related to CLABSIs, this article will consider the application of nursing theories that can further support the development of methodologies to practice that may result in better patient outcomes.

APPLICATION OF MIDDLE RANGE THEORY

Benner's Model of Skill Acquisition in Nursing outlines five stages of skill acquisition: novice, advanced beginner, competent, proficient, and expert (McEwen & Wills, 2011). Her work applied the Dreyfus model of skill acquisition to nursing which was published in 1984 and encompasses five stages of skill acquisition with regard to administration, education, practice, and research.

BIOGRAPHY

Patricia Benner received her Bachelor's in Nursing from Pasadena College, Masters of Science in Nursing from the University of California – San Francisco, and her PhD from the University of California – Berkley (Nursing Theories, 2013). She has written nine books and numerous articles while teaching and conducting research

since 1979. She currently is a Professor Emerita at the University of California, San Francisco and noted international speaker on health, stress, coping, skill acquisition, and ethics (Nursing Theories, 2013).

MAJOR INFLUENCES

Dr. Benner acknowledges her concepts in Nursing have been influenced by the Dreyfus Model of Skill Acquisition and Virginia Henderson. She adapted the Dreyfus Model to encompass five levels of skill acquisition including novice, beginner, competent, proficient, and expert (Novice to Expert, 2013). The classifications as seen in Figure 1 are widely used to provide a means of assessing and supporting progress in the development of skill or competencies, and to provide a definition of acceptable level for the assessment of competence or capability (Novice to Expert, 2013).

CONCEPTS

Benner considers 'excellent care practices' gained through an evolutionary process grown from experiential learning and transmission into practical skills. She stresses the importance of retaining and rewarding clinicians for their expertise (McEwen & Wills, 2011). Her central concepts are those of competence, skill, acquisition, experience, clinical knowledge, and practical knowledge (McEwen & Wills, 2011). She identifies seven domains of practice in nursing:

- Helping role

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- Teaching role
 - Diagnostic client-monitoring function
 - Effective management of rapidly changing situations
 - Administering and monitoring therapeutic interventions and regimens
 - Monitoring and ensuring quality of health care practices
 - Organizational and work-role competencies (McEwen & Wills, 2011)

These levels reflect progress from reliance on past abstract principles to the use of past concrete experience as paradigms and change in perception of situation as a complete whole in which certain parts are relevant (Nursing Theories, 2013). This process evolves through the five levels of skill acquisition as clinicians use clinical guidelines and algorithms or ‘rules’ at first and through experience and empirical research, transition to the use of a more focused intuition.

PROPOSITIONS

Clinicians have varying situational experience which is what separates novice from expert. As clinicians test and refine propositions, hypotheses, and expectations, expertise develops. Benner considers experience a requisite for becoming an expert and distinguishes a difference in a nurse that “knows that” and “knows how” (Benner, 1984). As clinicians move to a higher level of practice, a more holistic approach is used.

The expert clinician perceives situations as a whole and moves past concrete situations to focus directly on the problem. No time is wasted on irrelevant items.

Benner proposes nurses rely heavily on past experience and nurses must deepen their process of acquiring knowledge through their clinical situations. She emphasizes knowledge development through experience but does not neglect analytical thinking. Critical thinking is necessary at all skill levels. She considers analytical thinking the backbone for problem solving (Benner, 1984). Benner considers clinical judgment an essential skill also for all nurses. With experienced, expert nurses, her theory proposes actions are determined quickly without referring to rules or guidelines.

The acquisition of knowledge is strengthened through reflection. The process of reflection should be combined with the use of narratives as nurses often know more than they can communicate (Benner, 1984). The use of narratives helps to articulate meaning and further help develop learning from decision making related to their respective outcomes. Benner highlights the expert nurse as one that uses intuition based on unique attributes obtained through experience, self-awareness, and reflection.

LITERATURE EXAMPLE

A search via Cumulative Index of Nursing and Allied Health Literature reveals many listings with articles citing Benner's model. Standing (2007) used Benner's model

in a longevity study to help determine how clinical decision-making skills were acquired. Writers commonly discussed her applicability in development of protocols for orientation of new nurse graduates (McEwen & Wills, 2011).

One article described the importance of mentors during professional transition to an expert in the oncology setting (Dest, 2008). She cited the process from novice to expert and explained the personal steps she accomplished with the help of mentors along the 24 year journey. Research shows 83% of influential nurses have been mentored (Dest, 2008). Her journey involved expert mentors seeing something in her she didn't see in herself, encouraging her to go back to school where she became an oncology nurse practitioner.

PRACTICE APPLICATION

Benner's model has been used in the nursing profession to make innovative changes in how knowledge is acquired and developed, continuing education's rationale, and serve as a foundation for how nurses build and improve skills based on acquiring experience (Benner, 1984). Benner's model may be helpful to the current problem of CLABSIs by application to education. Performance and learning needs of staff nurses can be identified and classified based on her five levels of skill acquisition. This process can serve to identify experts that could serve in a teaching and mentoring role to those staff members that are still in the novice to beginner phase. Having an

understanding of the skill level of each nurse would better prepare the nurse in the educator role.

Education of staff is an ongoing process that should never cease. To provide safe, effective care for central lines, staff must be proficient in caring for tubing, needless connectors, dressings, and have proper technique for medications infusions, blood withdrawals, blood culturing, and flushing. Additionally, they must be trained and proficient in assessing for infection, occlusion management, removal, proper tip location, and patient/family education. Acquiring this set of skills and knowledge takes time and mentoring. Learning this skill set will help the clinician become one that not only “knows that” but “knows how.”

Often, a problem in facilities that lead to contamination of central lines is a lack of knowledge and lack of compliance to policies that are designed to prevent infection through proper care and maintenance of central line catheters. Implementing a training and competency model based on Benner’s concepts could help to give the structure needed for a successful CLABSI prevention program. Expert nurses have the ability and “know how” to mentor those in need of proper skill and knowledge. These nurses also could stay up to date with best practice by serving on key committees and being active members of key professional organizations such as the Association for Vascular Access (AVA), Infusion Nurse Society (INS), or Association of Professional in

Infection Control (APIC). The skills necessary for proper care of central lines need to be taught through demonstration. Benner's concept of reflection can be used to bridge the gap between theory and actual skill. This can be appropriate for nurses and patient families performing a return demonstration, further proving they have the knowledge and know how when faced with a situation or task (1984). Deeper meaning and skill can be enhanced by reflection in practice, leadership, and education (Benner, 1984).

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